

**REMARKS**

The application has been amended and is believed to be in condition for allowance.

Previously, claims 1-11 were pending. This amendment adds new claims 14-22. Claims 1, 14, and 22 are independent.

Claim 1 has been amended so as to emphasize that the recited invention is an antenna with at least one cable segment having specific characteristics.

The specification has also been amended, consistent with the amendments to claim 1, so that the characteristic impedance being recited is the differential mode characteristic impedance.

The phrase "differential mode" more specifically describes the characteristic impedance of the invention.

Applicant attaches extracts of an International Standard showing that those skilled in the art make a difference (page 131) between a "differential mode characteristic impedance" and a "common mode characteristic impedance". See that the differential mode impedance is well used as a design parameter (see paragraph marked "A" on page 135). For this reason, the nominal impedance of a cable is usually the differential mode impedance, but the word "differential" is typically omitted (see the sentence of paragraph A reading: "Thus, the common-mode

impedance of nominally 100  $\Omega$  cables (i.e., differential-mode) can vary within the range 25  $\Omega$  to 75  $\Omega$ ...").

Accordingly, the further recitation in claim 1 and amendment to the specification adding the words "differential mode" is not believed to be new matter but is only a more precise definition of the invention as disclosed in the original disclosure.

Claims 1-5 stand rejected as anticipated by SMITH 5,321,372. Claims 6-8 stand rejected as obvious over SMITH in view of KING et al. 4,404,424. Claims 9-11 stand rejected as obvious over SMITH '372 in view of SMITH 4,339,733 (SMITH '733).

The presently pending claims are believed to be both novel and nonobvious over the prior art.

Although any cable is somewhat capable of radiating electromagnetic waves when supplied with a modulated signal, the terms "radiating cable" means for one skilled in the art that the cable has a structure enhancing the radiating effect as disclosed in SMITH '733. Also see WILLIS 4,280,225.

Thus, the cable of SMITH '372 would not be considered a "radiating cable" by one of skill in the art. However, in the interest of advancing the case, the claim recitations have been amended to recite specifically an antenna. Further, amended claim 1 now recites that the load is connected at the ends of the wires, at a free end of the cable segment thus positively making

a difference with the cable of SMITH '372. SMITH '372 has no free ends as they are connected to a load while the cable segment still has a free end, i.e., an end not connected to an equipment. Amended claim 1 includes the recitations of the cable segments having a free end at which free end the insulated conductor wires have first ends connected to a load equal to a differential mode characteristic impedance of the cable segment.

Claim 22 is somewhat more specific reciting two cable segments, each cable segment comprising a pair of insulated conductor wires, a load terminating a first end of each cable segment at free ends of the pair of insulated conductor wires, the cable segment and the load having the same characteristic impedance, and the free ends of the insulated conductor wires being free of any connection to any equipment.

See that SMITH '372 discloses that for minimizing the radiations of the linking cable, the load connected between the wires has an impedance equal to the common mode impedance of the twisted pair (column 3 at lines 9-11). This further confirms that the characteristic impedance of the invention, in which radiations are maximized is necessarily the differential mode characteristic impedance. Since the disclosure of SMITH '372 teaches minimizing radiations from a linking cable by matching the common mode impedance of the twisted pair with the connected equipment load, and the invention teaches maximizing the

radiation from the antenna segment by having the free ends of the conductor wires connected to a load of equal differential mode characteristic impedance, it is clear that SMITH '372 neither anticipates nor renders obvious the present invention.

In summary, the presently recited invention differentiates from SMITH '372 in that the recited present invention enhances radiation instead of minimizing radiation, by the general structure that the present invention recites a load at the free end of the antenna instead of a load at both ends of a cable, and by the recitation of an essential element that the load has an impedance equal to the differential mode characteristic impedance instead of the common mode characteristic impedance. For all the above-noted reasons, independent claim 1 as well as the claims depending therefrom, is believed to be allowable.

Newly presented claims 14-22 are also believed to be allowable. Accordingly, applicant believes that the present application is in condition for allowance and an early indication of the same is respectfully requested.

An RCE is submitted concurrently with this amendment.

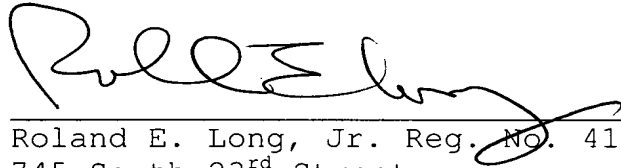
The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

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overpayment to Deposit Account No. 25-0120 for any additional  
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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**APPENDIX:**

The Appendix includes the following item(s):

- Six pages extracts of an *International Standard*, (2<sup>nd</sup> Edition, 2002-12).